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December 10, 1970

ACTIVITY SUMMARY

TO: John C.
From: [REDACTED]
Subject: Activity Summary
Facility Visit, Contract [REDACTED]
Reference: [REDACTED] 2201201-AS-22
Dates: 8, 9 December 1970

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On 8,9 December 1970, [REDACTED] visited the sponsors facility under Contract [REDACTED]. The objective of this trip was to repeat previous experiments in high frequency enhancement of a particular target using another dupe positive print of the ON material. This task was performed to illustrate that the information obtained is not a function of the duping process but is information present on the ON material. This objective was met on 8 December when results were photographed and prints were made illustrating information similar to that obtained from the initial experiments in mid-November.

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There are several points to mention concerning the exercises performed on 8,9 December.

- 1) One reason for the effort required to repeat the results with high frequency enhancement was the variability in the dupe positive image quality. The first conclusions obtained on the morning of 8 December was that the granularity, average density and contrast of the original dupe positive DP #1, was not repeated. We therefore requested additional dupe positives under set specifications as noted in the lab notebook. Although DP #1 quality

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Declassification Review
by NGA/DoD

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SECRET

2

was not exactly repeated, we extracted the information from a dupe of this set the afternoon of 8 December.

- 2) A not insignificant point to illustrate is that the operation has been performed by various technical persons. [] was introduced to the system that morning and was able to obtain results that day. This means that system operation is a defined and repeatable process.

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Based upon the above results we can conclude that repeatability of the optical process is a concluded fact, that the information extracted is real, and that the output can be repeated as required provided that dupe quality for the low contrast information can be maintained.

A briefing on optical image manipulation is planned for presentation at the customers facility on 16 December 1970.

PSC/c

Attachment

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Program Plan

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To John C.

From

Subject Program Plan

Date 9 Dec., 1970

During this visit we have demonstrated that very low contrast alpha-numeric characters can be obtained from other dupe positive copies. This result was obtained when we obtained DP of comparable grain, contrast and density characteristics. These were not available with previous duped results. Now that we can specify the characteristics needed, and assuming repeatability at the duping lab, then we can perform this demonstration as needed. One of the good results of this approach is that we are now aware of what is required for future dupe outputs of very low contrast information. We should try to specify the duping process with utmost accuracy so that we can always request that policy on a standard basis when pursuing high frequency

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enhancement of ² low contrast
imagery.

Three general objective areas
to follow are

1. Prepare for program briefing
now scheduled for week of
Dec. 14, 1970.
2. Use available material, and
determine as closely as
possible the specifications
for duping that best record
low contrast information for
high frequency enhancement.
Request more dupes as
necessary to determine
what range of input is
necessary to ensure that
desired product can be
obtained with variables that
are introduced in the duping
process. Only when this
process is proven consistent
can a unique spec be
obtained.
3. From information obtained
in #2 above, obtain new
D.P. for imagery selected two
weeks ago. This imagery should
be inputted to the optical
processor and scanned for

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low contrast information
previously undetected.

These steps generally outline the remaining tasks that should be performed in the laboratory low contrast enhancement effort. This work is not to stop here but the lab schedule is directed towards coherent processing and complex filters as well. The time schedule for the above three areas is as follows:

Time Schedule

Week starting 14 Dec, 21 Dec, 28 Dec, 4 Jan, 11 Jan

- | | Item | |
|----|--|----------------------|
| #1 | Program briefing | XXX |
| #2 | Dupe policy based on present target | xxxxxxxxxxxx |
| #3 | Duping of selected targets according to #2 and processing and evaluation | xxxxxxxxxxxxxxxxxxxx |

I expect that the portion of laboratory support activity in high frequency enhancement with amplitude filters can be completed in a four week time period.

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